



RANGE RESOURCES

October 8, 2009

Mr. Vince Yantko
Pennsylvania Department of Environmental Protection
California District Office
25 Technology Drive
Coal Center, Pennsylvania 15423

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Dept. of Environmental Protection
California District Office

Dear Mr. Yantko:

Subject: Incident Report

Range Resources – Appalachia LLC

Kearns Unit Well Nos. 1H, 2H, 3H, 4H, 5H and 6H

Well Permit Nos. 37-125-23274, 37-125-23275, 37-125-23640, 37-125-23644, 37-125-23641, and 37-125-23642

Hopewell Township, Washington County, Pennsylvania

Range Resources – Appalachia, LLC (Range Resources) is submitting this letter as an incident report regarding the spill incident that occurred in conjunction with the fracturing operations on the Kearns Unit Well Nos. 1H, 2H, 3H, 4H, 5H and 6H in Hopewell Township, Washington County, Pennsylvania. The Kearns Unit Well Nos. 1H, 2H, 3H, 4H, 5H and 6H are permitted by the Pennsylvania Department of Environmental Protection (PADEP) Bureau of Oil & Gas Management under Permit Nos. 37-125-23274, 37-125-23275, 37-125-23640, 37-125-23644, 37-125-23641, and 37-125-23642, respectively. This submittal contains the following information regarding the incident:

- A description of the incident, including the cause of the incident and notifications that were made;
- Actions taken to contain the release and recover the spill; and
- Actions to be taken to prevent a similar incident in the future.

Description of Incident

On Tuesday, October 6, 2009, Red Oak Water Transfer (Red Oak) was pumping diluted flowback water from Range Resources' Bednarski Impoundment to the Kearns frac. The water was being conveyed through an approximately 6-mile long run of 8-inch diameter PVC pipe that had been pressure tested prior to pumping the diluted flowback water. The pipe was hydrostatically pressure tested using fresh water to 150 psi on Thursday and Friday, October 1 and 2, 2009. The straight sections of pipe were connected with couplers specifically for this type of pipe to prevent leaks; however, at connections such as elbows, the connections were glued. The piping held the pressure

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when pressure tested with fresh water. The piping was laid through a culvert under Cherry Road with a 90 degree elbow in the piping on the upstream end of the culvert and the piping then went up a hill. This elbow was glued.

On October 6, 2009, Red Oak was transferring the water at a rate of 22 bbls per minute and an approximate pressure of 140 psi. In an effort to keep a sufficient supply of water in the Kearns Impoundment for the frac, the rate of pumping was increased to 25 bbls per minute with an approximate pressure of 145 psi. At approximately 7:00 pm, Red Oak noticed that they had lost pressure in the line and immediately turned the pumps off. The Red Oak employee discovered that at the 90 degree elbow connection at the culvert had broken loose and had ruptured (N40° 12' 39.6" and W80° 23' 51.2"). He immediately reported to Matt Werner and Jeremy Matinko of Range Resources that the line had ruptured at the 90 degree elbow connection and the diluted flowback water had spilled. Matt Werner of Range Resources calculated that approximately 250 barrels of the diluted flowback water had spilled out of the piping onto the ground. At the location of the elbow, the piping was laying in an unnamed tributary to Brush Run. Brush Run is a tributary to Buffalo Creek, which is a High Quality waterway.

Jeremy Matinko reported the spill to the PADEP Oil and Gas Inspector (Richard Freese) at 7:40 pm. He also went out to the site to observe and respond to the spill. In addition to Jeremy reporting to Richard Freese, Carla Suszkowski phoned Mike Arch, the PADEP Inspector Supervisor, and reported the spill. The primary contributing factor that led to this failure was found to be a defective elbow coupling that parted during the pumping process.

Actions Taken to Contain the Release and Recover the Spill

Upon discovering the incident, Range Resources personnel immediately took steps to attempt to contain the release. As previously stated, Red Oak personnel immediately shut down the pumps and flow was halted through the pipe. A vacuum truck was used to clean out 500 gallons of the spilled water that was contained in low areas in the tributary. In addition, absorbent material was also used in the immediate area of the spill to soak up residual fluid. The area was also flushed with approximately 1,200 gallons of fresh water.

Within 1 hour of the spill, Red Oak had reconnected the pipe at the elbow and had resumed pumping. They reconnected the pipe with a similar glued connection. They continue to monitor and walk the pipeline every 30 minutes to help to ensure that a similar incident does not occur again.

A sample of the diluted flowback water was taken from the piping and sent for characterization. The results are given below:

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- pH = 7.7
- Chloride = 11,000 mg/L
- Specific Gravity = 1.015
- Hardness = 37.4 mg/L
- Calcium = 1503 mg/L
- Iron = 3 mg/L
- Bicarbonate = 146 mg/L

Range Resources took part in the inspection conducted by the PADEP on October 7, 2009. At the time of the inspection, the PADEP identified a loss of approximately 200-300 minnows, collectively weighing less than 1 pound. At the time of the inspection, the PADEP also went upstream of the point of the spill and identified what appeared to be a sewage discharge into the unnamed tributary. No samples of the discharge could be collected because no sample bottles were available.

Actions to be Taken to Prevent a Similar Incident in the Future

To prevent a similar incident in the future, Range Resources is in the process of developing a Water Transfer Operating Standards to include as an Appendix to our Preparedness, Prevention, and Contingency (PPC) Plan that contractors will be required to follow when installing and using above-ground pipeline for flowback water pumping. Range Resources anticipates that some of the safe-guards to be included in this plan are:

- Detailed description of how the hydrostatic pressure test shall be conducted and how the pressure shall be determined for testing;
- Procedures for addressing leaks during hydrostatic pressure testing;
- Detailed procedures for piping run through culverts under roads;
- Procedures for the installation of check valves at low points to prevent spills if a piping failure does occur;
- Description of the line inspections to be performed by the contractor, frequency of the inspections, and documentation of the inspections;
- Descriptions of the location of spill containment apparatus and procedures to be followed if a piping failure occurs near a stream;
- Procedures for addressing leaks that occur during operation; and
- Procedures to drain lines, contain fluids, repair the line and re-pressure test the pipeline.

In addition to the development of this plan, Range Resources will review our Preparedness, Prevention, and Contingency (PPC) Plan for Washington County and

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make appropriate changes to the plan in light of this incident. Both of these plans will be submitted to the PADEP by October 16, 2009, unless requested otherwise by the PADEP.

If you have any questions, or require any additional information, please call me.

Very truly yours,

RANGE RESOURCES – APPALACHIA, LLC



Carla L. Suszkowski, P.E.
Environmental Engineering Manager

cc: Jack Crook, PADEP Southwest Regional Office
Alan Eichler, PADEP Southwest Regional Office
Michael Sherman, PADEP Central Office
Barbara Sexton, PADEP Central Office